

**FOOD SECURITY FOR HUMAN RESOURCES DEVELOPMENT
OR
WHY NUTRITION IS IMPORTANT FOR HUMAN CAPITAL**

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No nation can afford to waste its greatest national resource: the intellectual power of its people. But that is precisely what is happening where low birth weight is common, where children fail to achieve their full potential growth, where micronutrient deficiencies permanently damage the brain, and where anemia and short-term hunger limits children's performance at school. Hungry and undernourished people have less energy to undertake work, are less able to attend school, and once there, are less able to concentrate and learn. Increasingly, the intellectual resources rather than natural resources determine national power and economic growth. How can a nation compete internationally when 20-50% of its population is physically and intellectually compromised?

New scientific evidence on the generational and intergenerational links between nutritional status at different stages of the life cycle is compelling. Undernourished adolescent girls and women give birth to underweight and often stunted babies. These infants are less able to learn as young children, and are more likely themselves to be parents to infants with intra-uterine growth retardation and low birth-weight. Moreover, they are less able to generate livelihoods and are less well equipped to resist chronic disease in later life. Such lifecycle and intergenerational links demand sustained, long-term ameliorative action. Investing in food and nutrition security is a necessity, not a luxury.

But how can these problems be resolved? The first three years of life, plus life in the womb, are the most important periods in terms of mental, physical, and emotional development. It is during these critical windows of time that basic human capital is formed. Most growth failure occurs between 6 months and 24 months of age. Early damage due to anemia, iodine deficiency, and chronic malnutrition can only partially be reversed in later life. Preventive programs, therefore, must be accorded high priority. Health, family planning, and nutrition programs for women before and during pregnancy are critical to assure that mother and infant leave the childbirth experience in optimal physical and mental condition. After birth, growth promotion and development programs, integrated early childhood programs, and parent education are critical—and cost-effective. The return on investment in growth promotion and micronutrient programs varies from 7:1 to 84:1, and early childhood development programs are calculated to have a benefit-cost ratio of around 2:1 (Nutrition: A Foundation for Development; Geneva: ACC/SCN 2002).

Trials of preventive protein rich foods and iron fortification in the first two years of life have found considerable benefits to children's intellectual development up to 10 years later. Targeted fortification of weaning foods is cost effective and has been credited with eradicating most anemia in Sweden and the United States. Food fortification programs (salt iodization and iron fortification of staple foods) are inexpensive and effective in addressing most of these micronutrient deficiencies in the whole population.

Remedial efforts targeted at older children such as preschool programs, school health and nutrition programs, and adolescent interventions do help children do better in school, but because of an absence of interventions earlier in life, children often enter school as “damaged goods.”

There is much debate about whether schoolchildren, particularly adolescents, can catch up in their physical growth or in their mental capacity. Although it is likely that children are most vulnerable to the effects of nutritional deficits in the first few years of life and that some of these effects may be irreversible, much can still be done to improve the learning potential of malnourished schoolchildren. Under-nutrition is widespread among school children (particularly in South Asia and Africa), and their nutritional status often deteriorates during their school years. Anemia is a particularly pervasive problem of schoolchildren. De-worming and iron supplementation or fortification programs will help them work at their best. School feeding—particularly breakfasts or morning snacks—can help hungry children both stay in school and stay attentive.

Early nutrition, health, and psychosocial stimulation can prevent malnutrition and its impact on learning. This powerful synergy between psychosocial stimulation and nutrition suggests that integrated attention to the young child is critical and that early childhood is the most cost-effective period for investment in education. Later interventions with schoolchildren are useful remedial measures where children have suffered early insults and continue to suffer from malnutrition.

Key questions with regard to food security for human resources development are:

- 1) Although good nutrition is key for economic growth, it is rarely found in anti-poverty strategies. How can we make nutrition and food security a key element in poverty reduction?
- 2) Educating women has been found to be highly effective in reducing malnutrition. Although there are several global programs that address female education, it is still a major stumbling block in many countries. How can we "fast-track" educating girls without a negative backlash in the population?
- 3) What are some of the best ways to increase programmes on micronutrient fortification?